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	PLUMBING FIXTURE SCH	HEDULE *	
MARK	DESCRIPTION	ALTERNATE MANUFACTURER/MODEL	ALTERNATE MANUFACTURER/MODEL
WC1	WATER CLOSET (FLOOR MOUNT TOP SPUD) AMERICAN STANDARD "MADERA FLOWISE" #3461.001, ELONGATED BOWL, 1.28 GPF, VITREOUS CHINA, AND 1 1/2" TOP SPUD, ADA COMPLIANT. PROVIDE OPEN FRONT SEAT, AND SENSOR W/ MANUAL OVERRIDE FLUSH VALVE EQUAL TO SLOAN OPTIMA 111-1.28-ES-S (AC POWERED) FLUSH VALVE.	ZURN #Z5665 FIXTURE. ZURN #ZEMS6000IS FLUSH VALVE.	KOHLER HIGHCREST #K-4302 FIXTURE. HYDROTEK H8-128 VALVE.
WC2	WATER CLOSET (FLOOR MOUNT BACK SPUD) AMERICAN STANDARD "PRIOLO FLOWISE" #3697.001, ELONGATED BOWL, 1.28 GPF, VITREOUS CHINA, AND 1 1/2" BACK SPUD. ADA COMPLIANT. PROVIDE OPEN FRONT SEAT, AND SENSOR W/ MANUAL OVERRIDE FLUSH VALVE, EQUAL TO SLOAN OPTIMA 140-1.28-ES-S (AC POWERED) FLUSH VALVE.	ZURN Z5647—BWL FIXTURE, ZURN #ZEMS6152AV—HET, 1.28 GPF VALVE.	FIXTURE-NO 3RD CHOICE AVAILABLE. HYDROTEK H-8CB-128, 1.28 GPF VALVE.
UR	URINAL AMERICAN STANDARD "ALLBROOK" #6550.001, 1.0 GPF, VITREOUS CHINA, 3/4" BACK SPUD, AND SENSOR W/ MANUAL OVERRIDE FLUSH VALVE SLOAN #195-1.0-ES-S-TMO (AC POWERED). ADA COMPLIANT. PROVIDE FIXTURE CARRIER ZURN Z-1222.	ZURN #5760 WITH ZURN ZEMS6195AV-OB FLUSH VALVE. JAY R. SMITH #0637 CARRIER.	TOTO #UT104EV WITH TOTO #TEU2LN11 FLUSH VALVE. JOSAM #17550 CARRIER.
L1	LAVATORY (ACCESSIBLE, WALL HUNG) AMERICAN STANDARD "LUCERNE" # 0356.421 WHITE WITH CONCEALED ARM CARRIER AND DRAIN ASSEMBLY (7723.018). ADA COMPLIANT. FURNISH WITH SLOAN OPTIMA EAF—275 SOLAR POWERED FAUCET. SINK MODEL FOR SINGLE CENTER HOLE.	KOHLER GREENWICH #K-2032 WITH HYDROTEK 7000SLE SOLAR SENSOR FAUCET.	ELJER MURRAY II #051-0244 WITH TOTO TEL3GS10 SOLAR SENSOR FAUCET.
L2	2- STATION LAVATORY (ACCESSIBLE) SLOAN SLOANSTONE TWO STATION LAVATORY # ELS-72275-MSD, ADA COMPLIANT. VERIFY COLOR W/ARCH. FURNISH WITH SLOAN OPTIMA EAF-275 SOLAR POWERED FAUCETS. PROVIDE BATTERY POWERED SOAP DISPENSER ESD-350.	BRADLEY MODEL EXD-2N WITH HYDROTEK 7000SLE SOLAR SENSOR FAUCETS.	WILLOUGHBY MODEL WAW-232-DMF WITH TOTO TEL3GS10 SOLAR SENSOR FAUCETS.
EWH	ELECTRIC WATER HEATER A.O. SMITH MODEL #DEN-50, 50 GALLON, 4,500 W, 240 V, 1 PH, NON-SIMULTANEOUS DUAL ELEMENT, 27 GPH RECOVERY AT 70 DEGREE TEMPERATURE RISE. 3/4" INLET/OUTLET. PROVIDE DRAIN PAN, PRESSURE RELIEF VALVE. PROVIDE AO SMITH MODEL #PMC-5 EXPANSION TANK.	RHEEM/RUUD #ELD52. AMTROL ST-5-C EXPANSION TANK.	BRADFORD WHITE #LE250S3-3. STATE ETC-2X EXPANSION TANK.
СР	CIRCULATING PUMP BELL & GOSSET, SERIES NBF-22 IN-LINE CIRCULATOR PUMP, 1/12 HP, 115 VAC, FLA=0.8 1 Ph., 3/4" CONN., WITH A MAXIMUM OF 22 GPM AND 15' TDH. PUMP TO BE ALL BRONZE CONSTRUCTION, COORDINATE WITH ELEC. CONTRACTOR FOR POWER FEED. PROVIDE DISCONNECT SWITCH.	TACO MODEL #110.	ARMSTRONG MODEL #S-25.
DF	DRINKING FOUNTAIN (IN HIGH/LOW INSTALLATION) ELKAY SWRLFLO #EDFPB114C WALL-MOUNT BARRIER FREE FOUNTAIN. VERIFY MODEL/ COORDINATE WITH ARCH. FOR MOUNTING HEIGHTS (1-HIGH, 1-ADA HEIGHT/LOW; LEFT/RIGHT).	HALSEY-TAYLOR MODEL #OVL-II.	OASIS MODEL #F140R.
RPZ-1	1" REDUCED PRESSURE BACKFLOW PREVENTER WATTS MODEL #009QT-1" REDUCED PRESSURE BACKFLOW PREVENTER, CAST IRON CONSTRUCTION. PROVIDE AMERICAN BACKFLOW SPECIALTIES MODEL HB2 FIBERGLASS HOT BOX VALVE ENCLOSURE WITH 90W HEAT TRACING. PROVIDE 3" POURED IN PLACE CONCRETE SLAB 2" (MIN.) LARGER ON EACH SIDE THAN HOT BOX AND/OR AS REQUIRED BY MFR. VERIFY WITH AHJ SPECIFICATIONS.	ZURN #375-1" RPZ BACKFLOW PREVENTER. WATTS WATTSBOX HOT BOX.	FEBCO #860-1" RPZ BACKFLOW PREVENTER. HUBBELL EZ BOX HOTBOX.
RPZ-2	2" REDUCED PRESSURE BACKFLOW PREVENTER WATTS MODEL #009QT-2" REDUCED PRESSURE BACKFLOW PREVENTER, CAST IRON CONSTRUCTION. PROVIDE AMERICAN BACKFLOW SPECIALTIES MODEL HB2 FIBERGLASS HOT BOX VALVE ENCLOSURE WITH 90W HEAT TRACING. PROVIDE 3" POURED IN PLACE CONCRETE SLAB 2" (MIN.) LARGER ON EACH SIDE THAN HOT BOX AND/OR AS REQUIRED BY MFR. VERIFY WITH AHJ SPECIFICATIONS.	ZURN #375-2" RPZ BACKFLOW PREVENTER. WATTS WATTSBOX HOT BOX.	FEBCO #860–2" RPZ BACKFLOW PREVENTER. HUBBELL EZ BOX HOTBOX.
MTR	WATER METER MUELLER HERSEY HORIZON 2" TURBINE METER. PROVIDE REMOTE READ COUNTER INSIDE MAIN BUILDING. PROVIDE RAVEN PRODUCTS METER BOX— VERIFY SIZE, VERIFY REQUIREMENTS WITH LOCAL AHJ.	PARK ENVIRONMENTAL EQUIP. 2" TURBINE. PARK METER BOX.	NEPTUNE 2" TURBINE. STAR PIPE PRODUCTS METER BOX.
FD	FLOOR DRAIN ZURN ZN-415 WITH DEEP SEAL P-TRAP, 5" X 5" TYPE "S" SQUARE STRAINER AND 3" CONNECTION, VANDAL-PROOF TOP. PROVIDE MODEL WITH TRAP PRIMER CONNECTION ONLY FOR FLOOR DRAINS IN AREAS NOTED ON SHEET P4.	JOSAM #30000-S.	JAY R. SMITH #2005-B.
FDX	FLOOR DRAIN W/EXTENSION FLANGE ZURN MODEL Z415-I, 5" DRAIN, 2" CONNECTION. PROVIDE RAISED FLANGE W/NICKEL BRONZE GRATE, CAST IRON BODY. PROVIDE TRAP PRIMER CONNECTION.	JOSAM #30000-E1	WATTS FD-100-ER.
TPV	TRAP PRIMER VALVE PPP INC. MODEL# PR-500, 1/2" INLET, 1/2" OUTLET	JOSAM #88300.	WATTS #A200.
НВ	HOSE BIBB ZURN Z-1330-C, 3/4" WALL HYDRANT WITH VANDAL RESISTANT VACUUM BREAKER. ENCASED WITH KEY LOCK.	WATTS #HY-330.	JAY R. SMITH #5509QT.
FPHB	FREEZE-PROOF HOSEBIBB ZURN Z-1320-C, 3/4" NON FREEZE WALL HYDRANT WITH VANDAL RESISTANT VACUUM BREAKER. ENCASED WITH KEY LOCK.	JAY R. SMITH #5509QT.	WATTS HY-725.
TMV	THERMOSTATIC MIXING VALVE WATTS MMV-M1 MIXING VALVE WITH CHECKSTOPS. 3/4" INLETS. INSTALL IN ACCESSIBLE LOCATION. SET OUTFLOW TO SPECIFIED TEMPERATURE (LTHW/110 DEG F.).	LEONARD TM SERIES.	TACO 5000 SERIES.

^{*}OR APPROVED EQUAL

GENERAL NOTES - PLUMBING

1. PREPLAN ALL WORK PRIOR TO ORDERING, PURCHASING, OR FABRICATING ANY PART OF THE WORK DESCRIBED BY THIS DRAWING. 2. IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONFLICTS WITH EXISTING FIELD CONDITIONS OR THE WORK OF OTHER TRADES. 3. RESOLVE ALL CONFLICTS PRIOR TO INCURRING ANY MATERIAL OR

LABOR EXPENSES. 4. COMPLY WITH THE MANUFACTURER'S TECHNICAL INSTRUCTIONS WHEN INSTALLING PLUMBING FIXTURES, MATERIALS, AND DEVICES.

5. LOCATE FIXTURES AND EQUIPMENT GENERALLY AS SHOWN ON THE PLANS; HOWEVER, COORDINATE LOCATIONS WITH ACTUAL FIELD CONDITIONS TO PRESERVE ALL CODE—REQUIRED AND MANUFACTURER—REQUESTED SERVICE CLEARANCES.

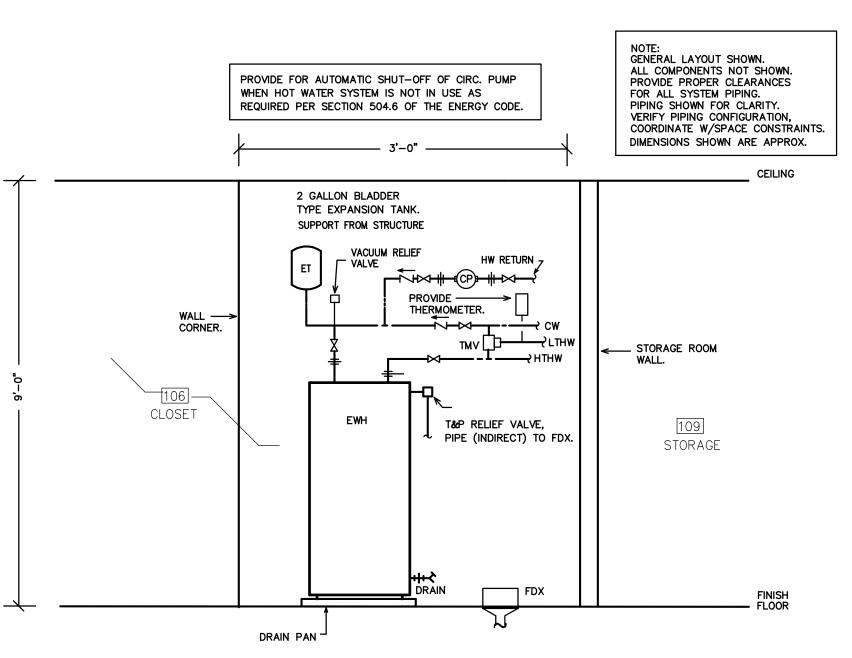
6. COORDINATE ROUTING OF ALL PIPING WITH BUILDING STRUCTURE AND WITH THE WORK OF OTHER TRADES. OFFSET VENT PIPING AROUND BEAMS AND JOISTS AS NECESSARY.

7. ALL HANDICAP FIXTURES AND INSTALLATION OF HANDICAP FIXTURES SHALL CONFORM TO ADA REQUIREMENTS. 8. AT EXTERIOR WALL, INSTALL WATER PIPING ON HEATED SIDE OF WALL INSULATION.

9. PROVIDE WATER HAMMER ARRESTORS AT THE END OF EACH COLD AND HOT WATER BRANCH RISER. SIZE ARRESTOR APPROPRIATELY.

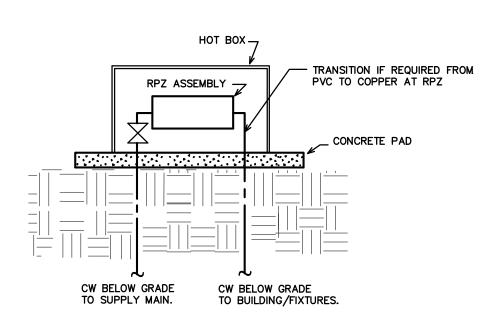
10. PROVIDE CONCRETE RING FOR ALL EXTERIOR CLEAN-OUTS. 11. REVIEW SITE PLAN FOR UTILITIES AND ORIENTATION PRIOR TO START

12. G.C. TO PROVIDE ROOF PENETRATIONS. 13. PROVIDE HTHW AT 140 DEGREES (F) AND LTHW AT 110 DEGREES (F).

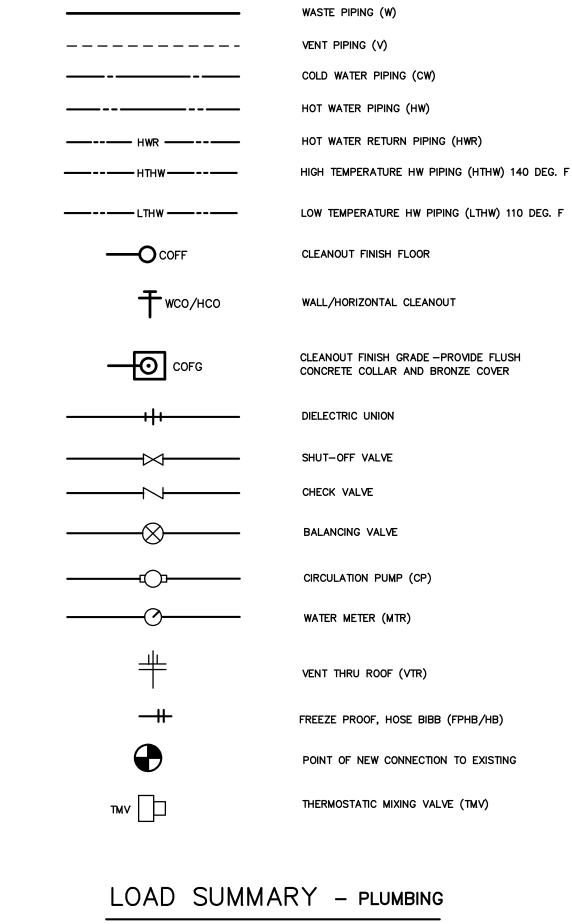


WATER HEATERS, PIPING, AND PIPING APPURTENANCES PROVIDED BY P.C. WATER HEATER SUPPORTS BY P.C.





RPZ HOT BOX DETAIL (TYP) SCALE: NOT TO SCALE

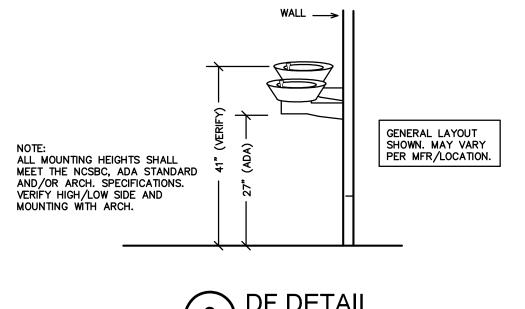


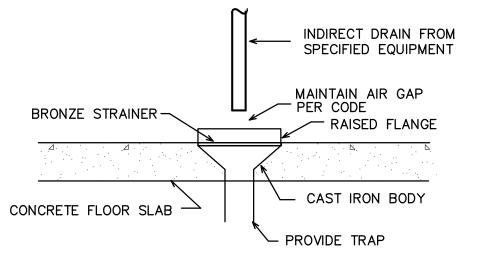
SYMBOL LEGEND - PLUMBING

SYMBOL

DESCRIPTION

93.5 65.4 A 2" CW SERVICE IS EXISTING.





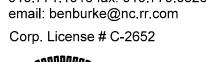


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STATE ID# 16-16033-01A WBS ELEMENT 51213.011

PROJECT TITLE CHEROKEE COUNTY REST AREA

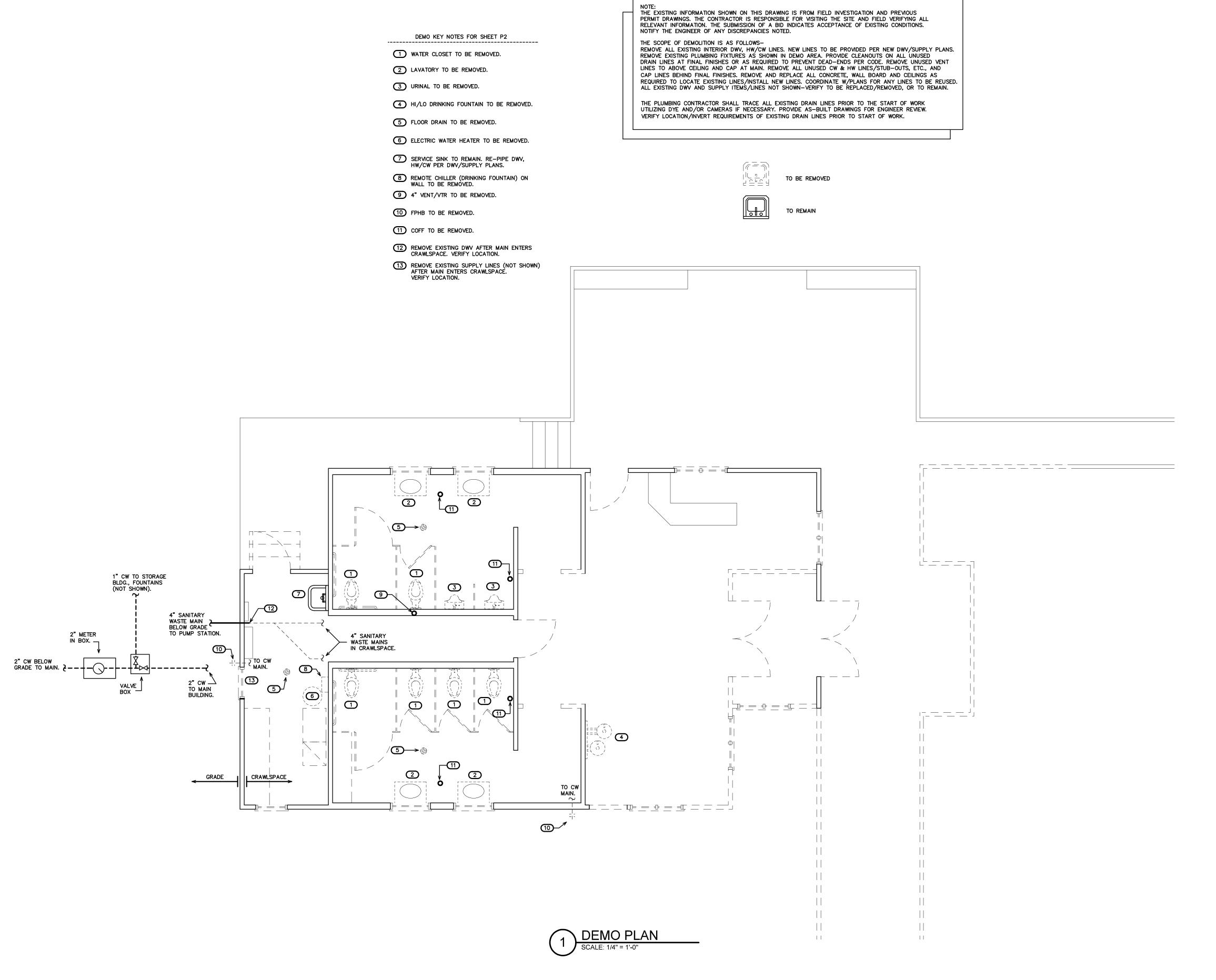
US 19 AND COVER STREET ANDREWS, NORTH CAROLINA

PROJECT NO. 1504a

DRAWING TITLE **PLUMBING SPECIFICATIONS**



10/18/16 PLOT DATE



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PROJECT TITLE

CHEROKEE COUNTY

REST AREA

US 19 AND COVER STREET ANDREWS, NORTH CAROLINA

PROJECT NO. **1504a**

DRAWING TITLE
EXISTING/DEMO
PLUMBING PLAN

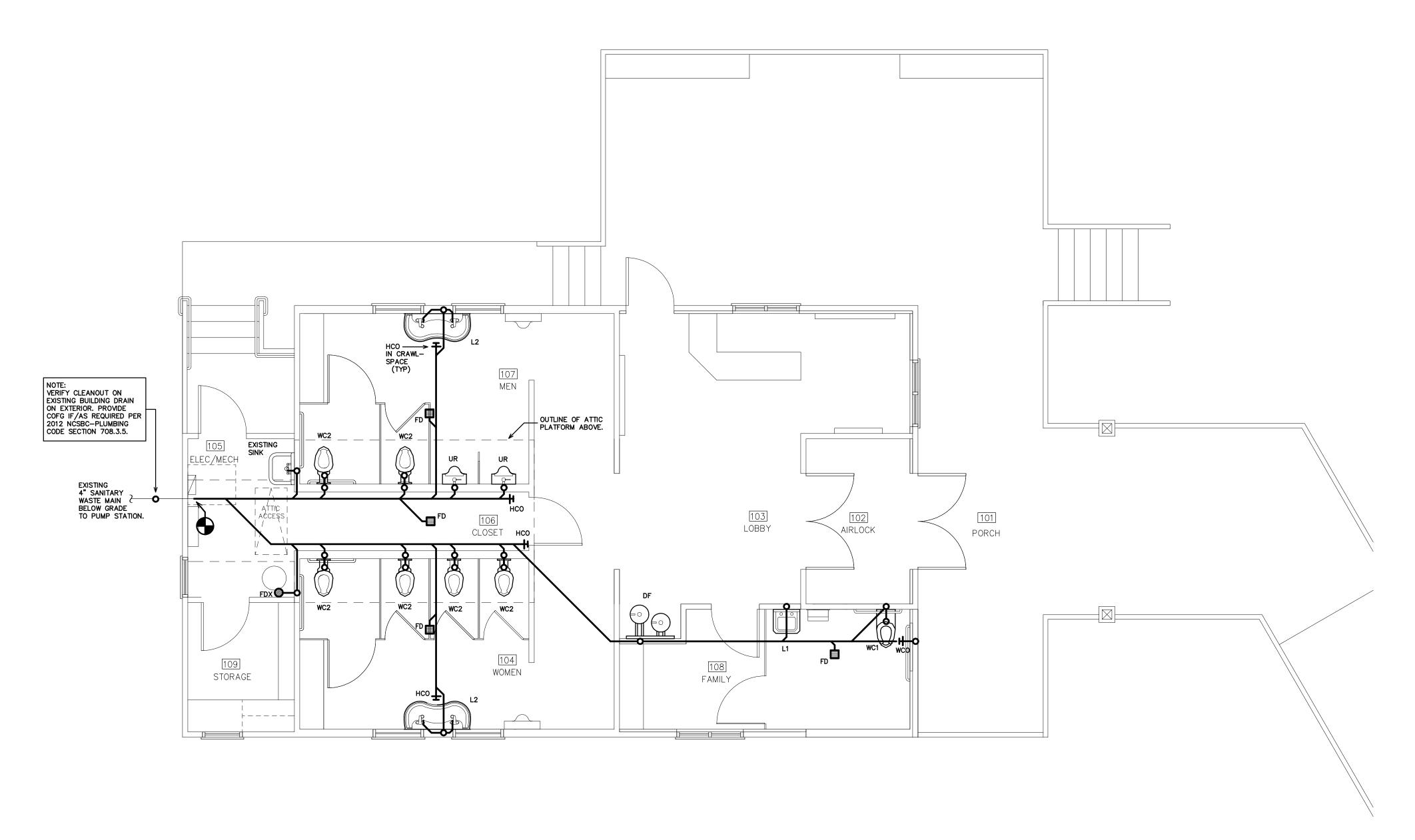
PZ

PLOT DATE

10/18/16

NOTE:
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PERMIT DRAWINGS. THE CONTRACTOR IS RESPONSIBLE FOR VISITING THE SITE AND FIELD VERIFYING ALL
RELEVANT INFORMATION. THE SUBMISSION OF A BID INDICATES ACCEPTANCE OF EXISTING CONDITIONS.
NOTIFY THE ENGINEER OF ANY DISCREPANCIES NOTED.

REMOVE AND REPLACE ALL CONCRETE, WALL BOARD, CEILINGS, ETC., AS REQUIRED TO LOCATE EXISTING LINES AND INSTALL NEW LINES. RE-PIPE TO ALL NEW/EXISTING FIXTURES AS REQUIRED FOR PROPER OPERATION. THE PLUMBING CONTRACTOR SHALL TRACE ALL EXISTING DRAIN LINES PRIOR TO THE START OF WORK UTILIZING DYE AND/OR CAMERAS IF NECESSARY. PROVIDE AS—BUILT DRAWINGS FOR ENGINEER REVIEW. VERIFY LOCATION/INVERT REQUIREMENTS OF EXISTING DRAIN LINES PRIOR TO START OF WORK.





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Ben Burke 10/19/2016

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PROJECT TITLE CHEROKEE COUNTY REST AREA

US 19 AND COVER STREET ANDREWS, NORTH CAROLINA

PROJECT NO. 1504a

DRAWING TITLE DWV PLAN



PLOT DATE

10/18/16

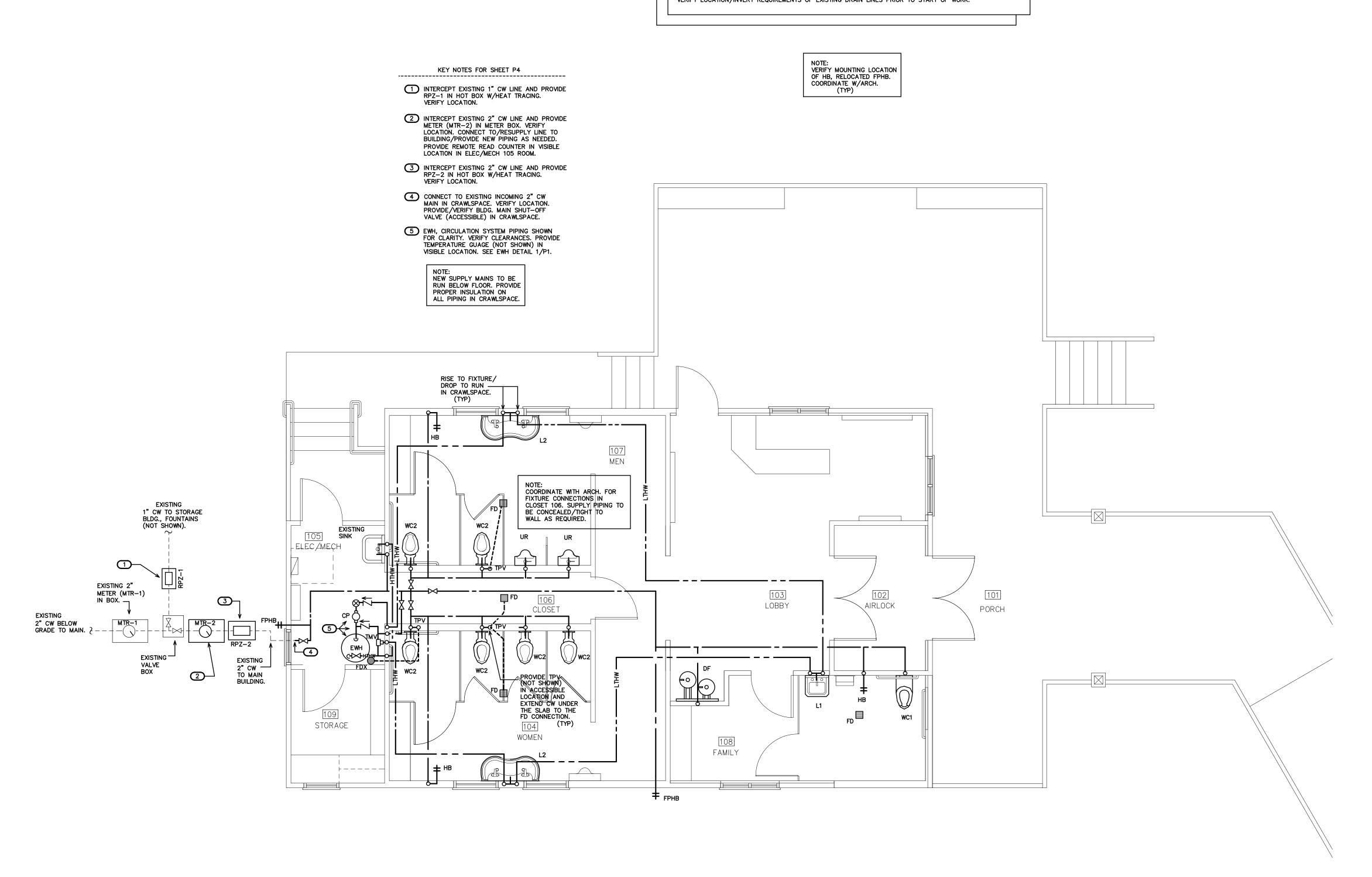
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PROJECT TITLE

CHEROKEE COUNTY

REST AREA

US 19 AND COVER STREET ANDREWS, NORTH CAROLINA

PROJECT NO. **1504a**

DRAWING TITLE
SUPPLY
PLAN

P4

PLOT DATE

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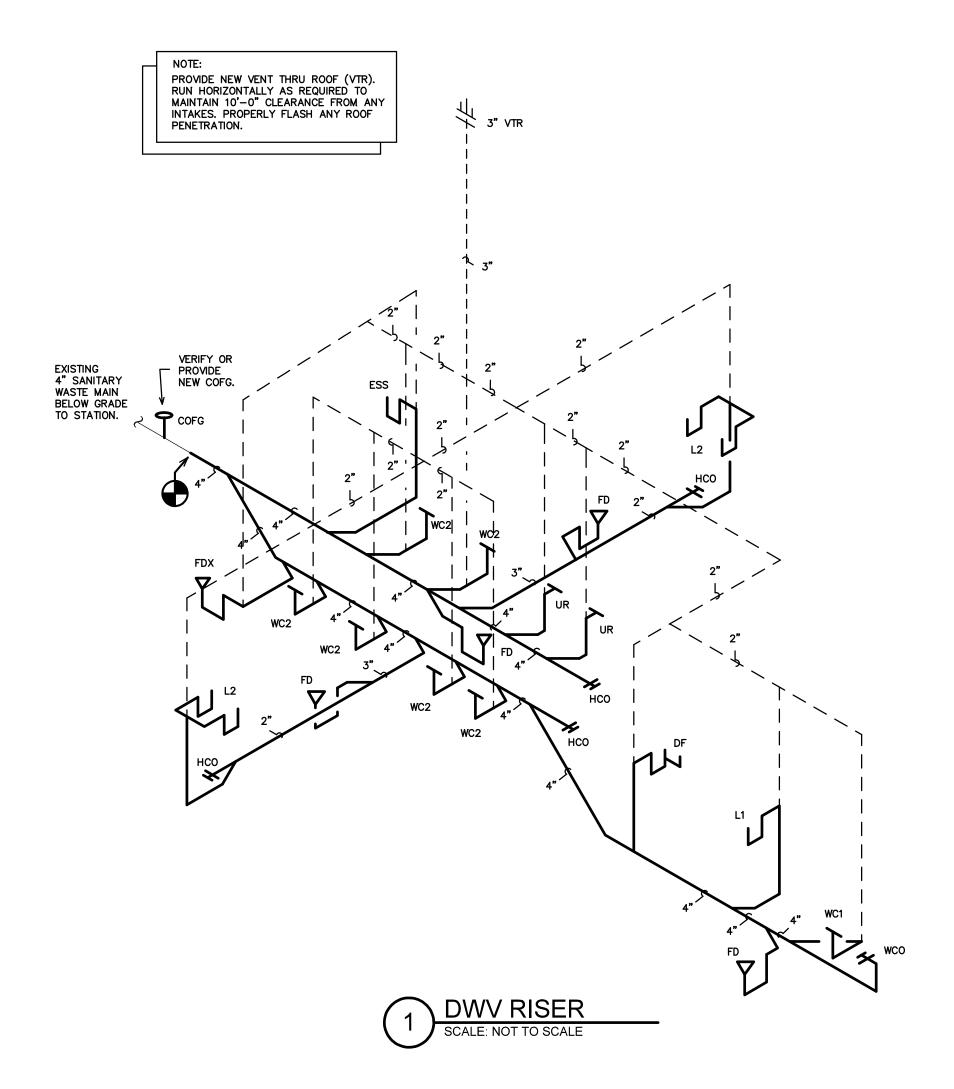
SUPPLY PLAN

SCALE: 1/4" = 1'-0"

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(VERIFY ALL EQUIPMENT REQUIREMENTS PRIOR TO ROUGH-IN)

PIPE SIZING	SCHED	ULE		
FIXTURE TYPE	DRAIN	VENT	cw	н₩
(WC) FLUSH VALVE WATER CLOSET	3"	1 1/2"	1"	_
(L) LAVATORY	1 1/2"	1 1/4"	1/2"	1/2"
(UR) URINAL	2"	1 1/2"	3/4"	_
(EWC) ELECTRIC WATER COOLER	1 1/4"	1 1/4"	1/2" *	-
(FPHB) FREEZE PROOF HOSE BIBB	_	ı	1/2"	1
(HB) HOSE BIBB	_	-	1/2"	_
(ESS) EXISTING SERVICE SINK	3"	1 1/2"	1/2"	1/2"
(FD) FLOOR DRAIN	3"	1 1/2"	_	-
(FDX) FLOOR DRAIN W/EXTENSION	2"	1 1/2"	-	_

* PROVIDE BACKFLOW PREVENTER PER NCSBC-PLUMBING SECT. 608.3, AND ASSE 1024 (WATTS SERIES 7 OR EQUAL) OR ASSE 1022 (WATTS SERIES SD-3 OR EQUAL) IF/WHERE REQUIRED.

RISER NOTES:

REPRESENTATIVE SIZES ARE GIVEN FOR EACH TYPE OF FIXTURE.

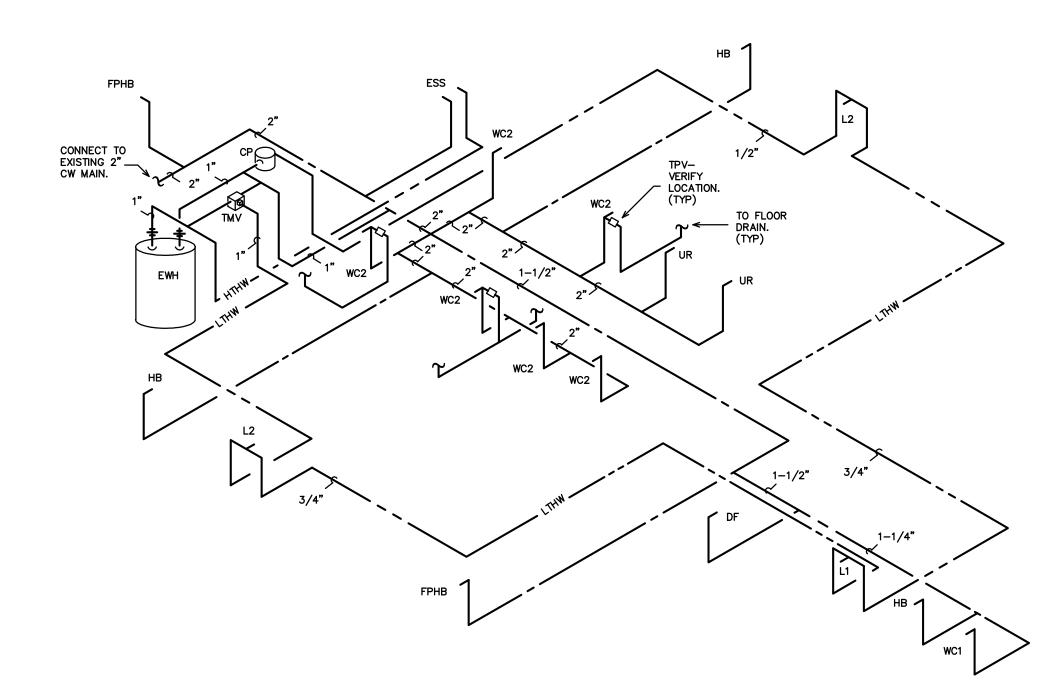
SEE PIPE SIZING SCHEDULE.

MINIMUM 2" DRAIN LINE SIZE UNDER SLAB.

MAINTAIN PIPE SIZES SHOWN UNTIL LARGER SIZE IS REACHED.

PIPE SIZES ARE MINIMUMS FOR INDIVIDUAL FIXTURES U.O.N.

NOTE:
SEE PLAN FOR SHUT-OFF VALVE LOCATIONS.
COORDINATE LOCATION AND NUMBER
WITH LOCAL INSPECTIONS DEPARTMENT.
PROVIDE ACCESS DOORS IF REQUIRED.



2 SUPPLY RISER
SCALE: NOT TO SCALE

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PROJECT TITLE

CHEROKEE COUNTY

REST AREA

US 19 AND COVER STREET ANDREWS, NORTH CAROLINA

PROJECT NO. **1504**a

DRAWING TITLE



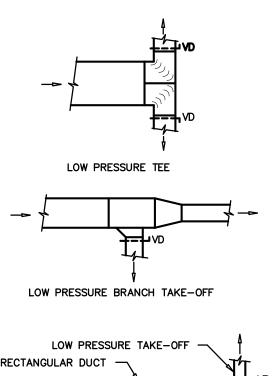
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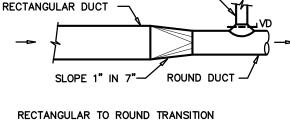
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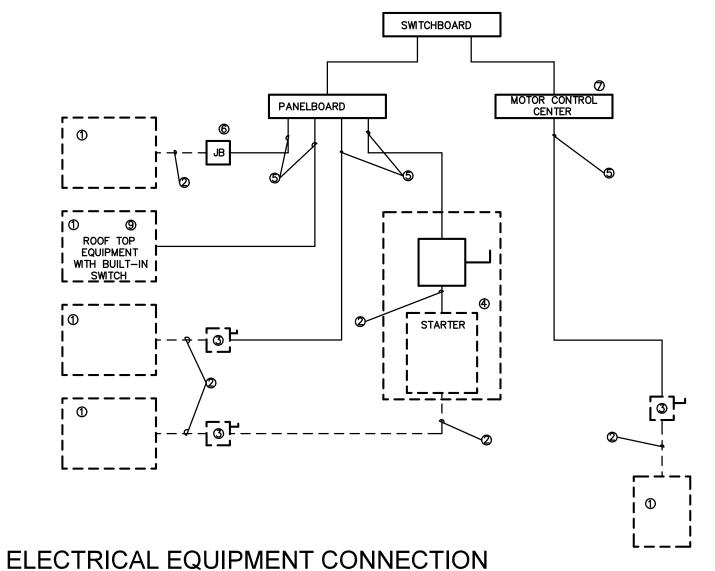


R= DUCT WIDTH

SQUARE THROAT ELBOW FULL RADIUS ELBOW



LOW PRESSURE DUCT ELBOWS



KEY NOTES FOR ELECTRICAL CONNECTION DRAWING 1/M1

(1) EQUIPMENT OF TRADES OTHER THAN ELECTRICAL.

② CONDUIT &WRING BY HVAC PLUMBING CONTRACTOR, OR OTHER TRADES

(3) IF AN ADDITIONAL DISCONNECT IS REQUIRED BY NEC. IT SHALL BE PROVIDED AND INSTALLED BY THE EQUIPMENT

4 A COMBINATION STARTER OR VFD MAY BE USED IN LIEU OF A SEPARATE DISCONNECT SWITCH AND STARTER. LOCATE ADJACENT TO EQUIPMENT.

(5) FEEDER CIRCUIT WIRING AND CONDUIT IN ELECTRICAL WORK. SEE PANELBOARD SCHEDULES FOR WIRE AND

6 JUNCTION BOX MAY BE SHOWN ON ELECTRICAL PLANS FOR SOME EQUIPMENT IF NO STARTER OR DISCONNECT IS SUPPLIED. A JUNCTION BOX SHALL BE INSTALLED ADJACENT TO EQUIPMENT. THE ELECTRICAL CONTRACTOR SHALL PROVIDE LINE SIDE WIRING TO THE JUNCTION BOX. LOAD SIDE WIRING WILL BE PROVIDED BY MECHANICAL CONTRACTOR OR OTHER TRADES.

7) PROJECTS UTILIZING AN MCC. THE STARTER, CB, OR VFD IN THE MCC ARE PROVIDED BY THE ELECTRICAL

(8) IN ALL CASES THE EQUIPMENT CONTRACTOR SHALL MAKE FINAL CONNECTIONS, START UP, AND TEST EQUIPMENT

9 IF THE ROOF TOP EQUIPMENT IS NOT PROVIDED WITH BUILT IN SWITCH, THE ELECTRICAL CONTRACTOR SHALL PROVIDE A DISCONNECT SWITCH.

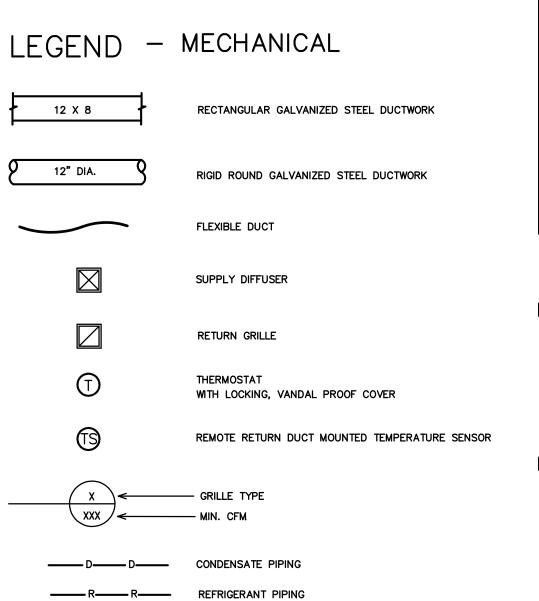
(1) IN A SINGLE PRIME CONTRACT, IT IS THE RESPONSIBITY OF THE PRIME CONTACTOR TO COORDINATE BETWEEN THE ELECTRICAL AND OTHERS TRADES.

GENERAL NOTES - MECHANICAL

- ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE STATE CODE AND ALL LOCAL AND OTHER APPLICABLE CODES.
- ANY PERMITS AND INSPECTION FEES SHALL BE SECURED AND PAID FOR BY THE MECHANICAL CONTRACTOR (MC).
- ALL WORK SHALL BE PERFORMED BY EXPERIENCED AND SKILLED CRAFTSMEN. THE MC SHALL
- THE LOCATION OF ALL DUCT, PIPING AND EQUIPMENT SHALL BE ADJUSTED TO ACCOMMODATE ANTICIPATED OR ENCOUNTERED INTERFERENCES.

COORDINATE ALL OF HIS WORK WITH THE GENERAL CONTRACTOR (GC) AND OTHER TRADES.

- THESE PLANS ARE DIAGRAMMATIC AND MAY NOT SHOW MINOR DETAILS AND LOCATIONS. FOR DIMENSIONS REFER TO THE ARCHITECTURAL PLANS.
- THE MC SHALL BE RESPONSIBLE FOR ALL ELECTRICAL STARTERS INTERLOCKS, CONTROL WIRING CONDUIT AND POWER WIRING FROM DISCONNECTS TO HIS EQUIPMENT, USING A LICENSED ELECTRICIAN.
- THE MC SHALL USE FIRE DAMPERS FOR PROTECTION OF THE OPENING IN ACCORDANCE WITH STATE AND LOCAL CODES IN ALL LOCATIONS WHERE PENETRATIONS OF RATED WALLS AND FLOORS OCCUR. SEE ARCHITECTURAL PLANS FOR RATED WALL AND FLOOR LOCATIONS. PROVIDE ACCESS DOORS AT ALL DAMPER LOCATIONS. LOCATE DOORS FOR EASY ACCESS. THERE ARE NO RATED WALLS PENETRATED IN THIS HVAC UPFIT.
- INSTALL FLEXIBLE CONNECTORS ON SUPPLY AND RETURN DUCTWORK AHU. ALL MECHANICAL EQUIPMENT SHALL OPERATE FREE OF OBJECTIONAL NOISE AND VIBRATION.
- INSTALL TURNING VANES IN SUPPLY DUCTS AT ALL ELBOWS AND SPLITTER DAMPERS. PROVIDE BALANCING DAMPERS IN ALL DUCTS WHERE SHOWN OR REQUIRED FOR SYSTEM BALANCING. PROVIDE SPIN IN STARTING COLLARS WITH DAMPERS AT ALL SUPPLY TAKEOFFS.
- DUCT DIMENSIONS ARE SHOWN INSIDE CLEAR. COORDINATE EXACT SIZE WITH SPACE AVAILABLE DUCT INSULATION SHALL BE 2" FIBERGLASS EXTERIOR DUCT INSULATION WITH FOIL FACING.
- THERMOSTAT, WIRING AND CONDUIT ARE TO BE FURNISHED BY THE MC. MOUNT THERMOSTAT 48" ABOVE THE FINISHED FLOOR. COORDINATE LOCATION WITH OWNER. PROVIDE AUTO CHANGEOVER THERMOSTAT WITH UNIT OFF POSITION AS MINIMUM. PROVIDE AN EMERGENCY SHUT-OFF SWITCH ABOVE THE THERMOSTAT. PROPERLY LABEL
- 12. THE MC SHALL KEEP THE PREMISES CLEAR OF DEBRIS FROM HIS WORK DURING CONSTRUCTION AND LEAVE THE AREA AND BUILDING CLEAN AT THE COMPLETION OF HIS WORK. HE SHALL ALSO LEAVE CLEAN ALL EXPOSED EQUIPMENT IN HIS CONTRACT.
- COORDINATE DIFFUSER AND CEILING EXHAUST GRILLE LOCATIONS WITH LIGHTS AND GRID. COORDINATE MOUNTING FRAME WITH CEILING TYPE.
- THE M.C. SHALL COORDINATE WITH AND PROVIDE EQUIPMENT SPEC. SHEETS TO THE GENERAL AND ELECTRICAL CONTRACTORS FOR REVIEW PRIOR TO ORDERING EQUIPMENT.
- PROPERLY SUPPORT FLEXIBLE DUCT, MINIMUM 75% DEFORMATION. PROVIDE SHEET METAL ELBOWS AT ALL 90 DEGREE BENDS.
- 16. ALL DUCT JOINTS SHALL BE SEALED AIRTIGHT WITH FIBER ENPREGNATED MASTIC OR HARDCAST AND TAPE.
- SUPPORT AHU, EXHAUST FANS, HEAT WHEEL AND ALL DUCTWORK, ETC. FROM STRUCTURE. PIPE STRAPPING WILL NOT BE ALLOWED.



OUTDOOR AIR CAL	CULATIONS
OUTDOOR VENTILATION AIR PROVIDED PER TABL STATE BUILDING CODE: MECHANICAL CODE.	LE 403.3, 2012 NORTH CAROLINA
APPLICATION	CFM/FLUSHING FIXTURE
TOLIET ROOMS	70 CFM EACH
9 FLUSHING FIXTURES X 70 CFM = 630 CFM 700 CFM EXHAUST PROVIDED BY () ERV	
APPLICATION	CFM/SQ.FT.
CORRIDORS/UTILITIES	0.06 CFM/SQ.FT
655 SQ. FT. X 0.06 CFM/SQ.FT. = 39 CFM	
655 SQ. FT. X 0.06 CFM/SQ.FT. = 39 CFM TOTAL OUTSIDE AIR REQUIRED - 669 CFM TOTAL OUTSIDE PROVIDED - 700 CFM	

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MECHANICAL SYSTEMS AND EQUIPMENT

4A

METHOD OF COMPLIANCE:

Energy Cost Budget

Exterior Design Conditions

Thermal Zone

winter dry bulb summer dry bulb

Interior Design Conditions winter dry bulb

summer dry bulb 75 F relative humidity 50%

Building Heating Load -21,500 BTU/hr (heat wheel reduction) 29,400 BTU/hr

37,400 BTU/hr Building Cooling Load -96,00 BTU/hr (heat wheel reduction) 27,800 BTU/hr

Mechanical Spacing Conditioning System

Unitary — The building is served by (1) one 3.5 ton split system heat pump unit with with (1) one energygy recovery ventilator.

50,900 BTU/hr

Boiler — Not applicable to this project. Chiller — Not applicable to this project.

Equipment efficiencies

Efficiencies and outputs are listed on equipment schedules - See drawings.

Equipment schedules with motors.

Motors used on this project are included in the efficiency rating of the unit. See drawings for efficiencies. STATE ID# 16-16033-01A WBS ELEMENT 51213.011

PROJECT TITLE CHEROKEE COUNTY REST AREA

US 19 AND COVER STREET ANDREWS, NORTH CAROLINA

> PROJECT NO. 1504a

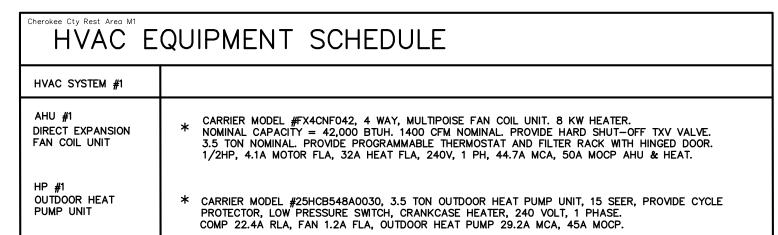
DRAWING TITLE HVAC **SCHEDULES**

PLOT DATE

10/18/16

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* OR APPROVED EQUAL

NOTE: 1. AHU HEATER KW RATINGS ARE AT 208 VOLTS.

2. PROVIDE OUTDOOR TSTAT TO PREVENT ELECTRIC HEAT OPERATION WHEN HEAT PUMP CAN MEET THE HEATING LOAD

AIR DISTRIBUTION SCHEDULE MATERIAL SERVICE NOTES MANUFACTURER MODEL NO SIZE COLOR BY ARCHITECT GYP CEILING MOUNT W/ ROUND NECK 8" DIA ALUMINUM SUPPLY CARNES COLOR BY ARCHITECT SIDE WALL MOUNT CARNES 16" X 14" 18" X 16" ALUMINUM RETURN COLOR BY ARCHITECT GYP CEILING MOUNT 14" X 14" **CARNES** RATAF ALUMINUM **EXHAUST** 10" X 10" B" ROUND NECK *** COLOR BY ARCHITECT GYP CEILING MOUNT 12" X 12" ALUMINUM **EXHAUST** CARNES RATAF

COORDINATE BORDER TYPE WITH THE CEILING/WALL TYPE. SEE ARCH SHEETS PROVIDE DUCT TRANSITIONS AS REQUIRED.

* OR APPROVED EQUAL BY TUTTLE & BAILEY, OR METALAIRE

**	PROVIDE	SQUARE	то	ROUND	DUCT	TRAN	SITIO	ON C	N TOP	OF	GRILL	E.
	PROVIDE	INSULATI	ON	PACKAG	E FOR	TOP	OF	ALL	DIFFUS	SERS	AND	GRILLES

ENE	RGY RECOV	ÆRY	UNIT	SCHEDU	JLE												
											THERMAL PERFOR	RMANCE					
					s / Moto					DESIGN CO	ONDITIONS		ERV OUT	LET CONDITIONS	ENERGY RECOVERY (THERMAL) CAPACITY	
EQUIP. NUMBER	MODEL NO.	FLOW	STATIC PRESSURE (EXTERNAL)	FAN MOTORS FAN MOTORS	FLA (FOR UNIT SINGLE POINT)	VOLTS/ PHASE/ HZ	MCA	FUSE/CB MAX		IP(F) & HUMIDITY /B OR RH)	ROOM AIR TEMP ((DB) / (WE	• •	LEAVING AIR TEM (DB) /		COOLING CAPACITY (MBH / TON)	HEATING CAPACITY (MBH)	NOTES:
									SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	TOTAL	TOTAL	
ERV-1	MICROMETL FWVH111H69000HEF	700 CFM	0.50IN H ₂ 0	(2) FOR FANS	14.76 A	208-230V 1 PH 60 HZ	18.45	25	88F / 72F	11F / 8	75F / 50%	72F / 50%	80.3F / 70.8F	57.5F / 45	9.6 / 0.8	21.5	ALL

1. FLOW & LOADS BASED ON ARI-1060 PERFORMANCE & CERTIFIED CORE.

NOT USED.

3. VENTILATION TYPE: STATIC PLATE, HEAT & HUMIDITY TRANSFER. 4. INCLUDE INTEGRAL DISPOSABLE FILTERS (OUTSIDE AND ROOM AIR) WITH MERV8 OR BETTER RATING.

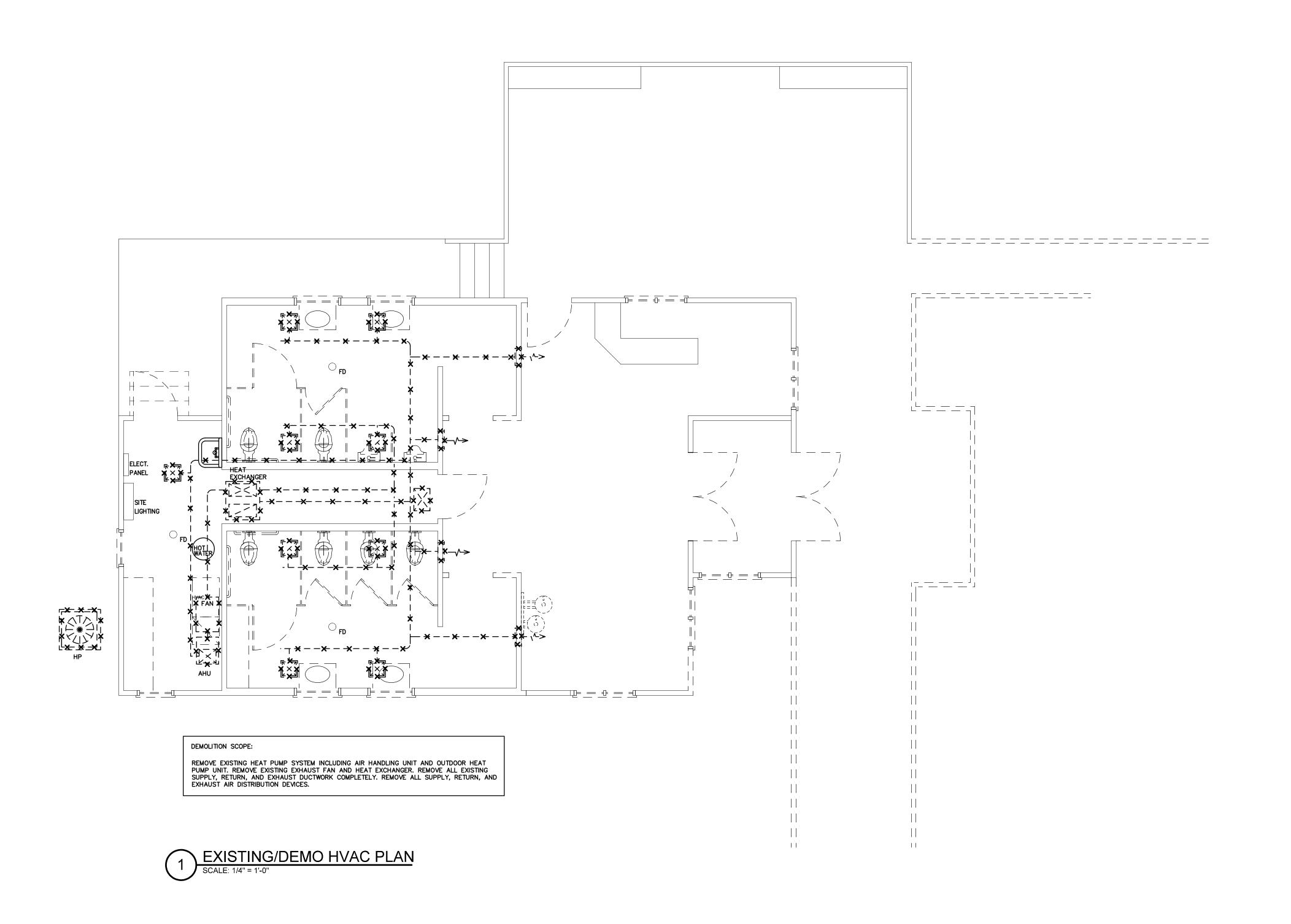
5. INCLUDE SINGLE POINT ELECTRICAL POWER CONNECTION.

6. HOUSING SHALL BE GALVANIZED, .20 GAUGE (OR THICKER) STEEL WITH LAPPED CORNERS. 7. OR EQUALS BY SEMCO, OR THYBAR.

8. SERVICE ACCESS DOORS SHALL BE GASKETED & PROVIDE ACCESS FOR MAINTENANCE OF ALL COMPONENTS. 9. INCLUDE INSULATION ON ALL CASE WALLS & DOORS.

10. INCLUDE THERMALLY PROTECTED MOTORS WITH STARTERS.

11. UL LISTED 1995 12. PROVIDE WITH FUSED DISCONNECT SWITCH.



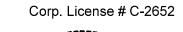
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STATE ID# 16-16033-01A WBS ELEMENT 51213.011

PROJECT TITLE CHEROKEE COUNTY REST AREA

US 19 AND COVER STREET ANDREWS, NORTH CAROLINA

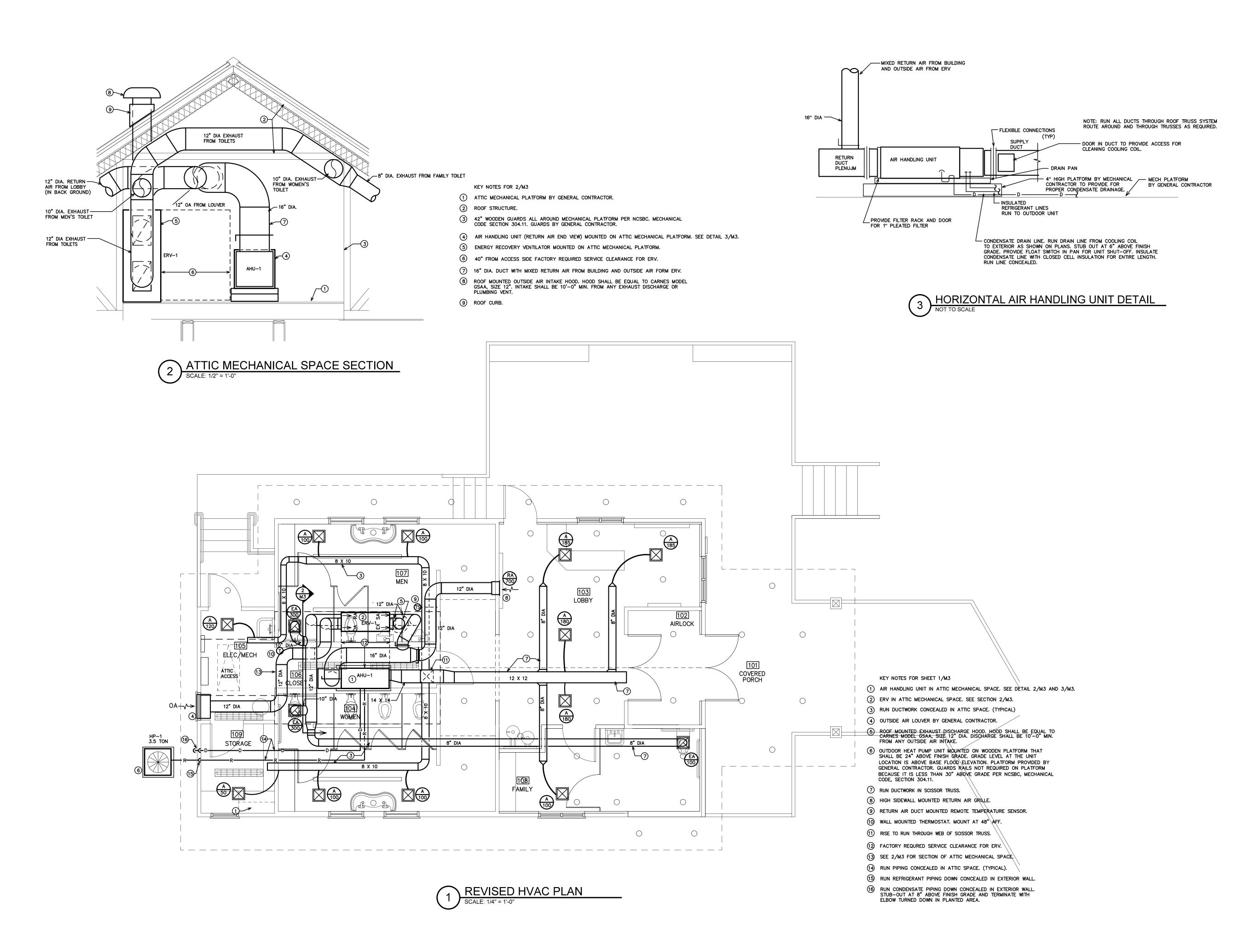
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DRAWING TITLE EXISTING/DEMO HVAC PLAN



PLOT DATE

10/18/16



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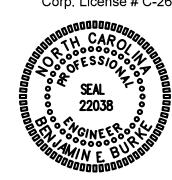
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PROJECT TITLE

CHEROKEE COUNTY

REST AREA

US 19 AND COVER STREET ANDREWS, NORTH CAROLINA

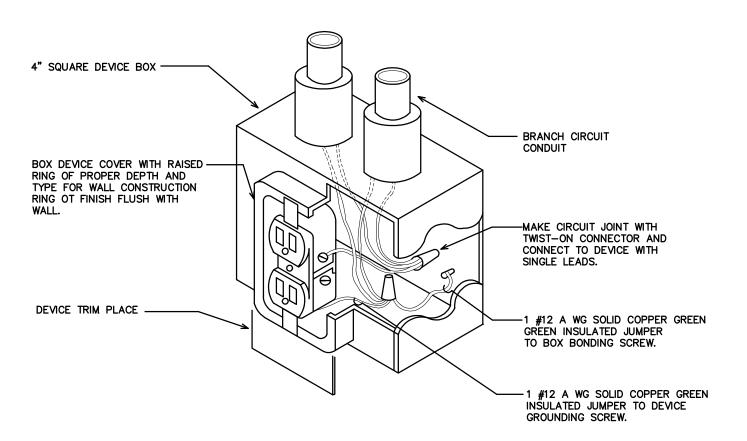
PROJECT NO. **1504a**

DRAWING TITLE
REVISED
HVAC PLAN

M3

PLOT DATE

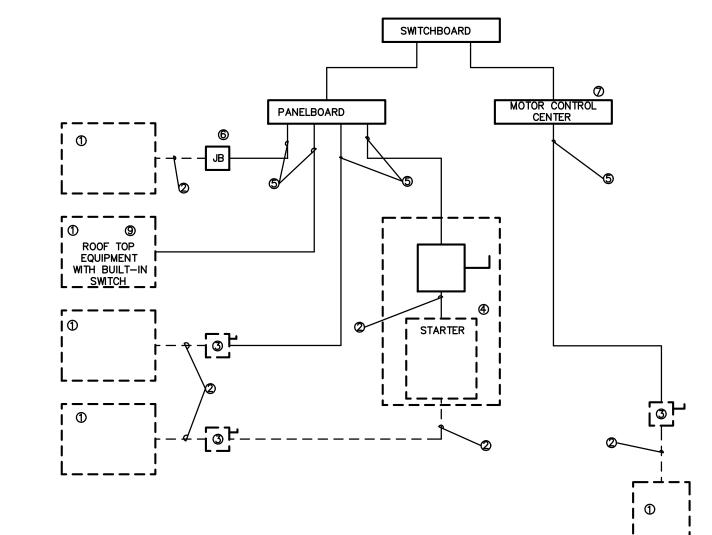
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RECEPTACLE GROUNDING DETAIL

ELECTRICAL NOTES

- (1) EQUIPMENT OF TRADES OTHER THAN ELECTRICAL.
- ② CONDUIT &WRING BY HVAC PLUMBING CONTRACTOR, OR OTHER TRADES
- 3 IF AN ADDITIONAL DISCONNECT IS REQUIRED BY NEC, IT SHALL BE PROVIDED AND INSTALLED BY THE EQUIPMENT
- (4) A COMBINATION STARTER OR VFD MAY BE USED IN LIEU OF A SEPARATE DISCONNECT SWITCH AND STARTER. LOCATE ADJACENT TO EQUIPMENT.
- 5 FEEDER CIRCUIT WIRING AND CONDUIT IN ELECTRICAL WORK. SEE PANELBOARD SCHEDULES FOR WIRE AND
- 6 JUNCTION BOX MAY BE SHOWN ON ELECTRICAL PLANS FOR SOME EQUIPMENT IF NO STARTER OR DISCONNECT IS SUPPLIED, A JUNCTION BOX SHALL BE INSTALLED ADJACENT TO EQUIPMENT. THE ELECTRICAL CONTRACTOR SHALL PROVIDE LINE SIDE WIRING TO THE JUNCTION BOX. LOAD SIDE WIRING WILL BE PROVIDED BY MECHANICAL CONTRACTOR OR OTHER TRADES.
- 7 PROJECTS UTILIZING AN MCC. THE STARTER, CB, OR VFD IN THE MCC ARE PROVIDED BY THE ELECTRICAL CONTACTOR.
- (8) IN ALL CASES THE EQUIPMENT CONTRACTOR SHALL MAKE FINAL CONNECTIONS, START UP, AND TEST EQUIPMENT.
- (9) IF THE ROOF TOP EQUIPMENT IS NOT PROVIDED WITH BUILT IN SWITCH, THE ELECTRICAL CONTRACTOR SHALL PROVIDE A DISCONNECT SWITCH.
- 10 IN A SINGLE PRIME CONTRACT, IT IS THE RESPONSIBITY OF THE PRIME CONTACTOR TO COORDINATE BETWEEN THE ELECTRICAL AND OTHERS TRADES.



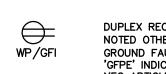
ELECTRICAL EQUIPMENT CONNECTION

ELECTRICAL LEGEND

LINEAR FLUORESCENT LIGHT FIXTURE: LETTER DENOTES TYPE OF LIGHT FIXTURE (REFER TO LIGHTING PLAN AND FIXTURE SCHEDULE).



CABINET EXHAUST FAN



DUPLEX RECEPTACLE - 120V; MOUNT 18" TO CENTER AFF UNLESS NOTED OTHERWISE; 'WP' INDICATES WEATHER PROOF, 'GFI' INDICATES GROUND FAULT CURRENT INTERRUPT PROTECTED. 'GFPE' INDICATES GROUND FAULT PROTECTION OF EQUIPMENT PER NEC ARTICLE 427.22



LIGHT SWTCH

LIGHT SWITCH WITH INTEGRAL INFRARED MOTION SENSOR FOR AUTOMATIC SHUT-OFF WITH UP TO 2 HOUR ADJUSTABLE DELAY.

MOTOR RATED SWITCH

JUNCTION BOX

TELE/DATA OUTLET - PROVIDE JUNCTION BOX AND CONDUIT WITH PULL STRING ABOVE CEILING. PROVIDE WIRING BACK TO SERVICE ENTRY.

MAIN TELEPHONE PANEL- PROVIDE 2'X2' FIRE RESISTANT BACKBOARD.

PROVIDE (2) 2" CONDUITS TO TELEPHONE SERVICE RIGHT-OF-WAY.

SEE SITE PLAN FOR LOCATION.

TIME CLOCK SINGLE-POLE HOMERUN TO PANELBOARD

TWO-POLE OR 3-POLE HOMERUN TO PANELBOARD

EMERGENCY LIGHT EXIT EXIT LIGHT

---- SWITCH LEG

COMBINATION EXIT/EMERGENCY LIGHT

BRANCH CIRCUIT WIRING

GROUND CONNECTION

DISTRIBUTION PANELBOARD

DISCONNECTING MEANS AS REQUIRED BY CODE

EXTERIOR PHOTOCELL

WEEKS TURNER ARCHITECTURE

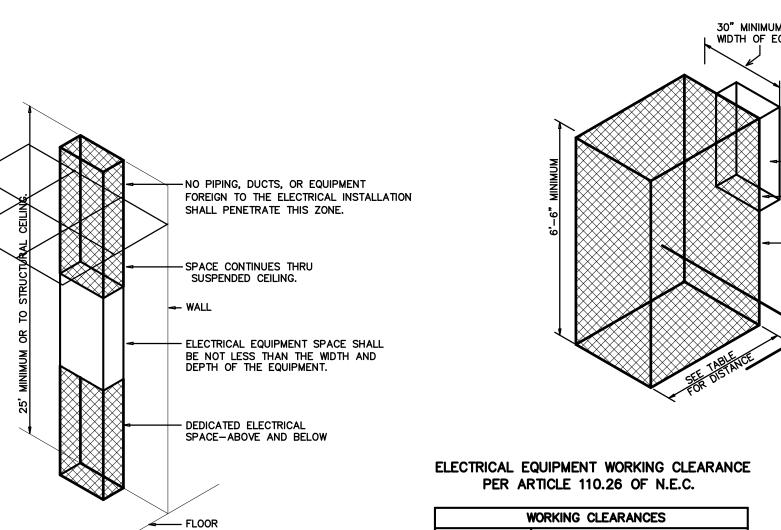
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ELECTRICAL EQUIPMENT DEDICATED SPACE PER ARTICLE 110.26.F.1 OF N.E.C.

LAY-IN CEILING

2012 NC ENERGY CODE ELECTRICAL SUMMARY

Lighting schedule (each fixture type)

Energy Code: Prescriptive Performance ASHRAE 90.1: Prescriptive Performance

lamp type required in fixture

number of ballasts in fixture

(whole building or space by space)

total interior wattage specified vs allowed

☐ 506.2.1 More Efficient Mechanical Equipment

506.2.5 On-Site Supply of Renewable Energy

506.2.6 Automatic Daylighting Control Systems

506.2.2 Reduced Lighting Power Density ☐ 506.2.3 Energy Recovery Ventilation Systems ■ 506.2.4 Higher Efficiency Service Water Heating

total exterior wattage specified vs allowed

Fixture Schedule

1307 va / 1374 va

number of lamps in fixture ballast type used in the fixture

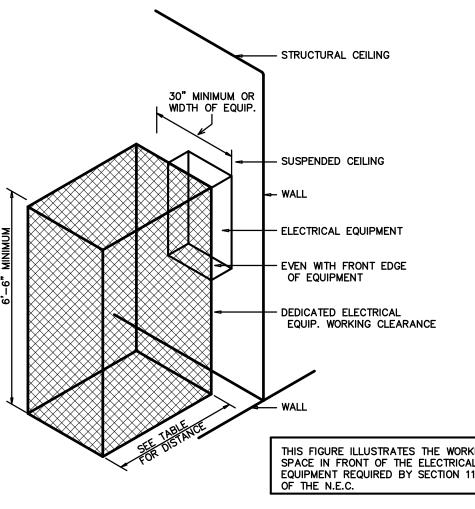
total wattage per fixture

Additional Prescriptive Compliance

ELECTRICAL SYSTEM AND EQUIPMENT

Method of Compliance:

DEDICATED SPACE



V	VORKING	CLEAF	RANCES	
VOLTAGE TO			DISTANCE IN	FEET
ROUND NOMINAL	CONDITION:	1	2	3
-150 51-600		3 3	3 3–1/2	3 4

THIS FIGURE ILLUSTRATES THE WORKING SPACE IN FRONT OF THE ELECTRICAL EQUIPMENT REQUIRED BY SECTION 110.26

WHERE THE CONDITIONS ARE AS FOLLOWS:

EXPOSED LIVE PARTS ON ONE SIDE OF THE WORKING SPACE AND NO LIVE OR GROUNDED PARTS ON THE OTHER SIDE OF THE WORKING SPACE, OR EXPOSED LIVE PARTS ON BOTH SIDES OF THE WORKING SPACE THAT ARE EFFECTIVELY GUARDED BY INSULATING MATERIALS. 2 EXPOSED LIVE PARTS ON ONE SIDE OF THE WORKING SPACE AND GROUNDED PARTS ON THE OTHER SIDE OF THE WORKING SPACE. CONCRETE, BRICK OR TILE WALLS SHALL BE CONSIDERED AS GROUNDED.

EXPOSED LIVE PARTS ON BOTH SIDES OF THE WORK

ELECTRICAL CLEARANCES

STATE ID# 16-16033-01A WBS ELEMENT 51213.011

PROJECT TITLE CHEROKEE COUNTY REST AREA

US 19 AND COVER STREET ANDREWS, NORTH CAROLINA

PROJECT NO. 1504a

DRAWING TITLE **ELECTRICAL DETAILS/ SPECIFICATIONS**

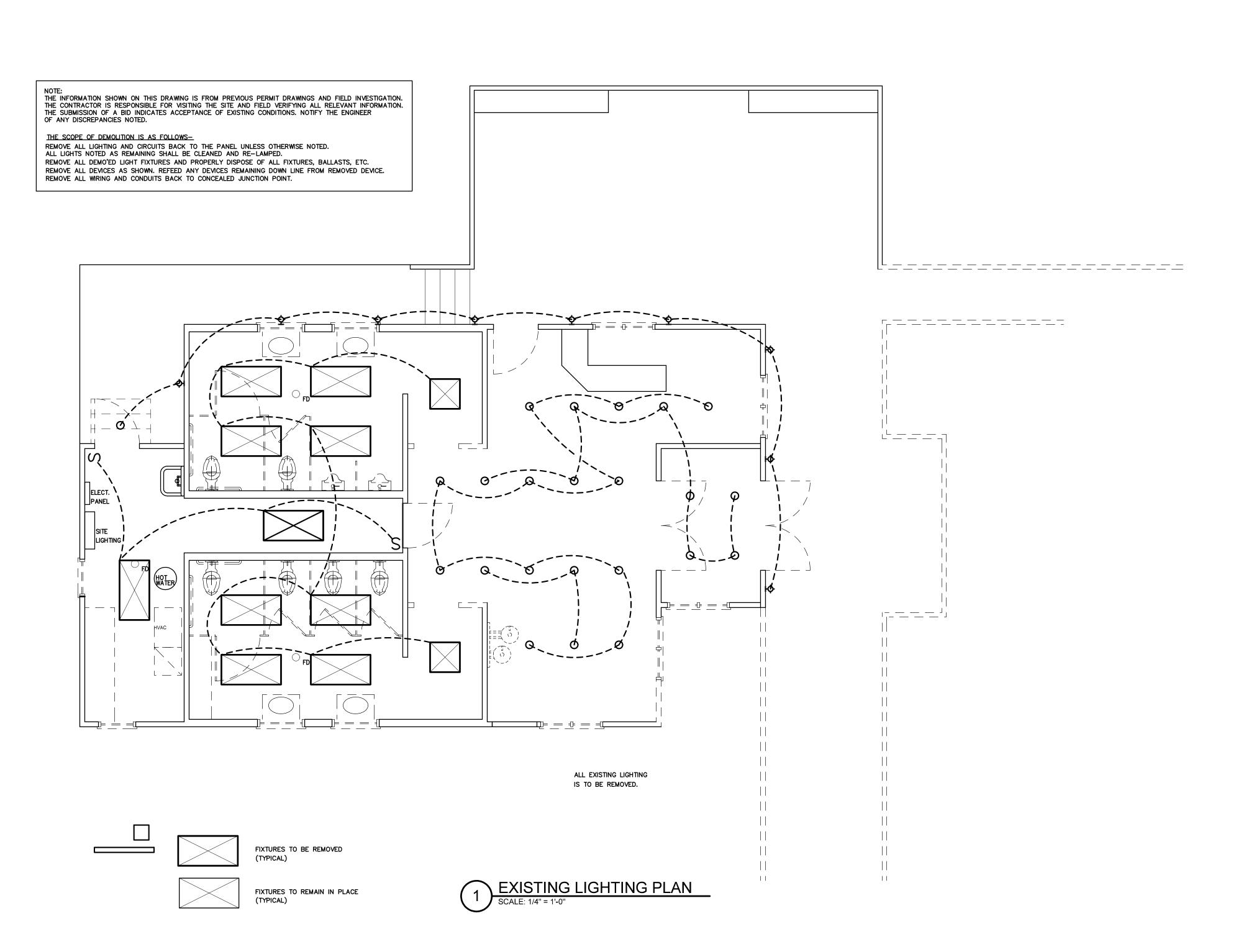


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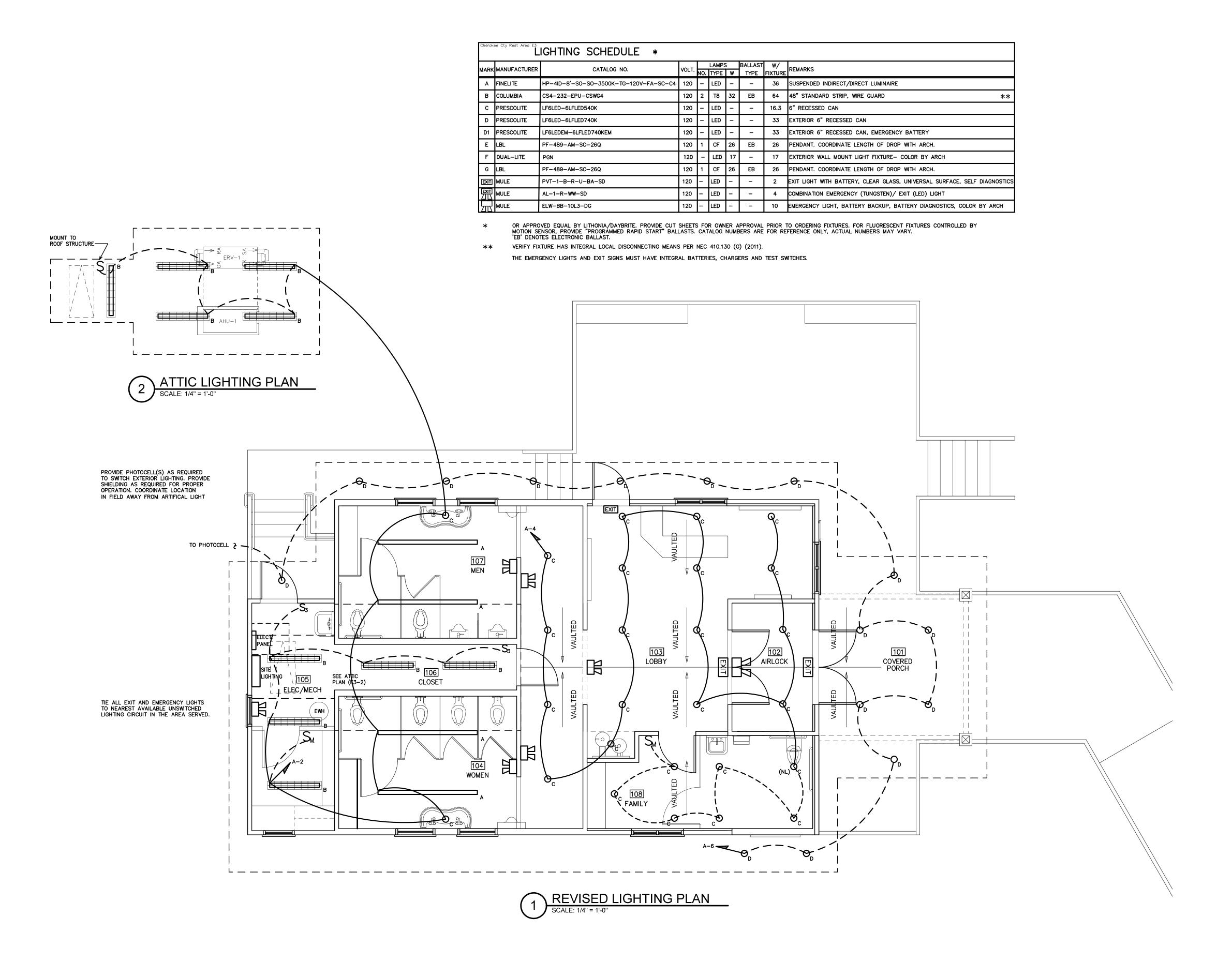
PROJECT NO. 1504a

DRAWING TITLE EXISTING LIGHTING PLAN



PLOT DATE

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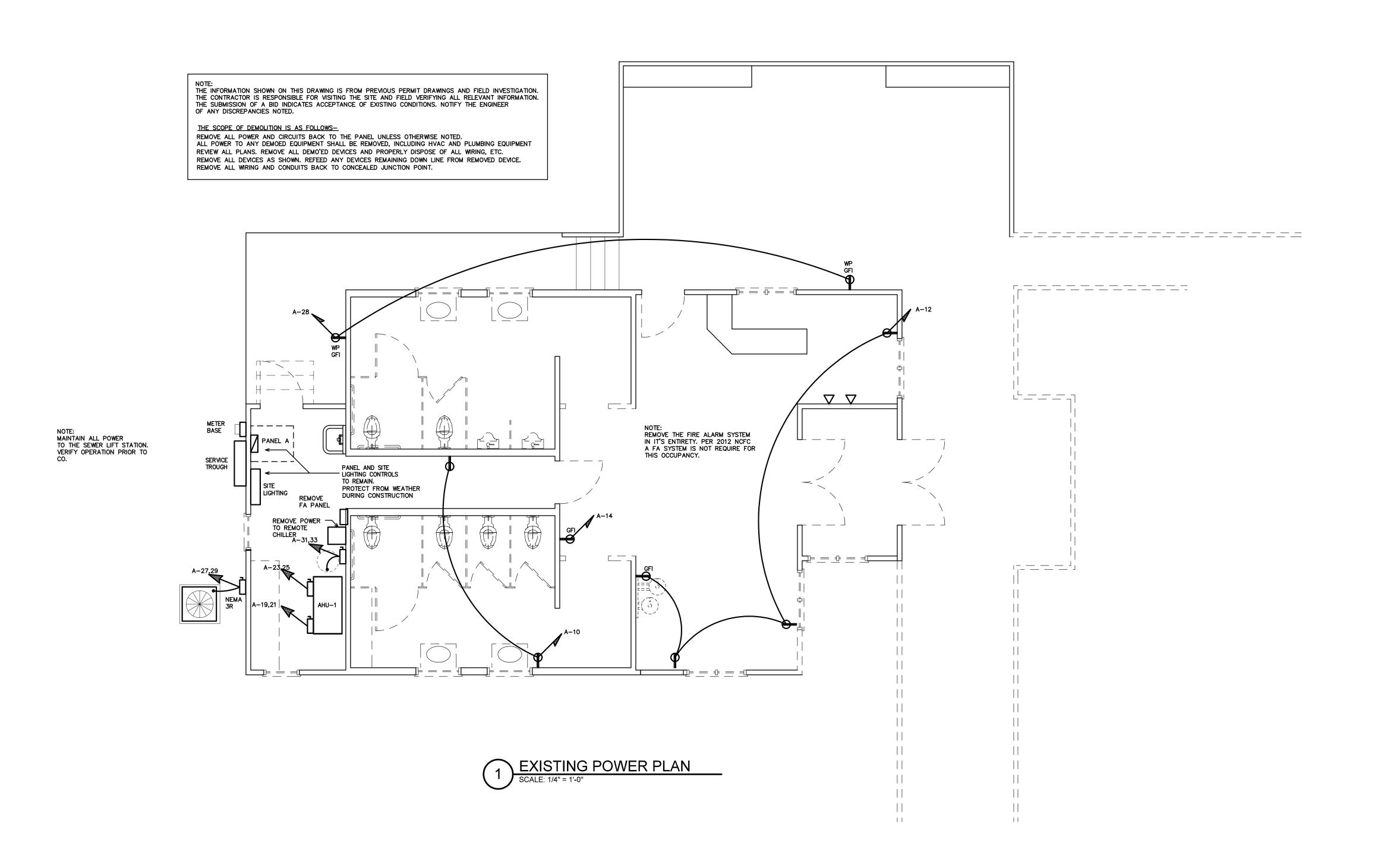
US 19 AND COVER STREET ANDREWS, NORTH CAROLINA

PROJECT NO. 1504a

DRAWING TITLE REVISED LIGHTING PLAN

PLOT DATE

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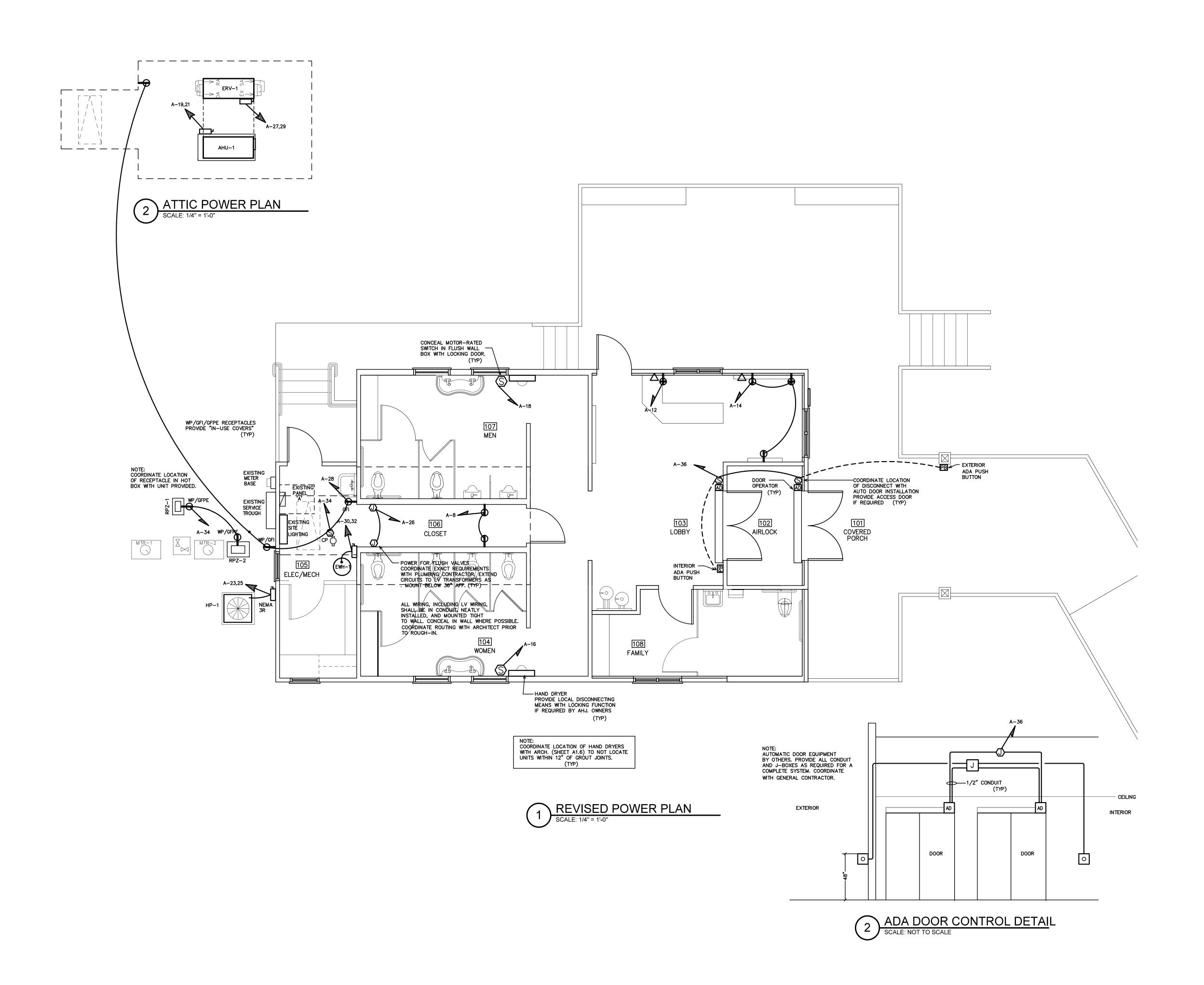
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DRAWING TITLE EXISTING POWER PLAN



PLOT DATE

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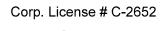


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DRAWING TITLE REVISED POWER PLAN

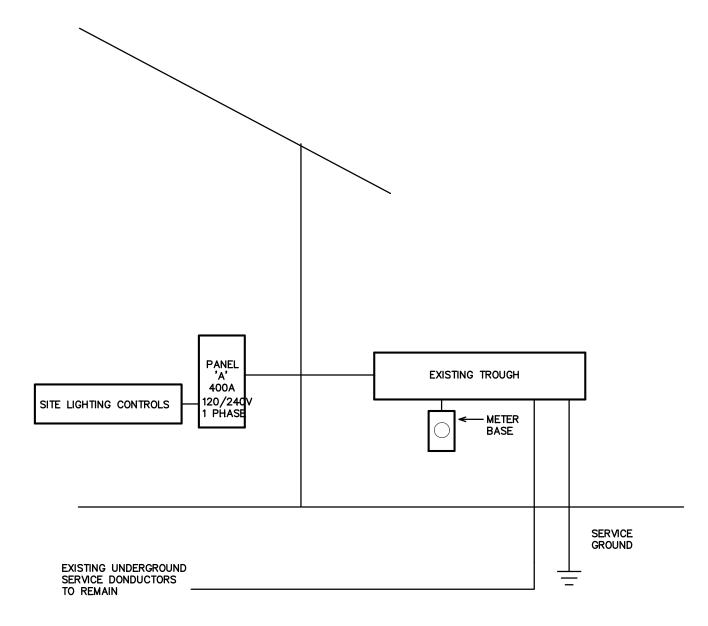


PLOT DATE

10/18/16

Cherokee Cty Rest Ared		1T V	VIRIN	IG	SCHEDULE
EQUIPMENT	MCA	МОСР	VOLTS	PH	WIRE SIZE
AHU-1	44.7A	50A	240V	1	2-#8, 1-#10 GND IN 3/4" CONDUIT
HP-1	29.2A	45A	240V	1	2-#8, 1-#10 GND IN 3/4" CONDUIT
ERV-1	18.5A	25A	240V	1	2-#10, 1-#10 GND IN 3/4" CONDUIT
EWH-1	(4.5KW)	30A	240V	1	2-#10, 1-#10 GND IN 3/4" CONDUIT

THE ELECTRICAL CONTRACTOR SHALL VERIFY ALL EQUIPMENT ELECTRICAL REQUIREMENTS PRIOR TO ROUGH—IN AND RELEASING GEAR. ADJUST BREAKER, WIRE SIZES, ETC. AS REQUIRED.



VERIFY AVAILABLE FAULT CURRENT AT SERVICE LOCATION WITH LOCAL POWER COMPANY. PROVIDE INFORMATION TO ENGINEER TO CALCULATE MINIMUM PANEL AIC RATING.
EC SHALL PROVIDE LABELING INDICATING FAULT CURRENT AT SERVICE ENTRY AND ON ALL PANELS PRIOR TO ENERGIZING.

1 ELECTRICAL SERVICE RISER

THE ELECTRICAL SERVICE IS EXISTING AND SHOWN FOR REFERENCE ONLY. NO NEW WORK IS REQUIRED.

EXISTING PANEL A TYPE: NQOD				М	OUNTING	120/240 1 G: SURFACE AIC: VERIF		3 WRE	400AMAIN CIRCUIT BREAKER EQUIPMENT GROUND BUSXYES □NO SERVICE ENTRY RATEDXYES □NO				
		<u> </u>			_					_	. ,		
LOAD		CKT		ER PHASE	CKT	NEUTRAL	CKT		PER PHASE	CKT	LOAD		
SERVICE		BRKR	Α	В	NO	A B	NO	A	В	BRKR	SERVICE		
ROAD LIGHTS		30A			1 1		2			20A	TRIM & MECH ROOM		
		100/1			3		4			20A	RESTROOM LIGHTING		
ROAD LIGHTS		30A			5		6			20A	LOBBY LIGHTING		
					7	\cap	8			20A	FOYER & LOBBY (PHOTOCELL)		
ARRESTER SPARE		20A			9		10			20A	RECEPTACLE (TOILETS & URINALS)		
ARRESTER SPACE		20A			11		12			20A	RECEPTACLE		
SEWAGE ALARM		20A			13		14			20A	EWH RECEPTACLE (GFI)		
SPARE		20A			15		16			30A	HAND DRYERS (WOMEN)		
ROADWAY LIGHTS		15A			17	\bigcap	18			30A	HAND DRYERS (MEN)		
AHU (INSIDE)					19	\cap	20			20A	HEAT EXCHANGER FAN		
2P/25A					21	\cap	22			20A	HEAT EXCHANGER FAN		
AHU (STRIPHEAT)		60A			23		24			20A	FACP, HORN, EXIT W/ LOCK		
2P/25A					25	$\overline{}$	26			20A	SPARE		
CONDENSING UNIT		60A			27		28			20A	WP RECEPT. (GFI)		
2P/60 AMP					29	\cap	30				SPARE		
EWH (WATER HEATER)		30A			31		32				SPARE		
_					33		34				SPACE		
SEWAGE PUMP		40A			35		36				SPACE		
_					37		38				SPACE		
SPACE					39		40				SPACE		
SPACE					41		42				SPACE		
NOTES	SUB-TO	TAIS 'R'					BUS			SUB-	TOTALS 'A'		
THO ILL	200-10	INLU D			MXX		LUGS		 		TOTAL C 'D'		
						- 100A -	FEED				TOTAL CONNECTED LO		
						-100A							
						<u>VERIFY</u>	SIZE	A	A	LAMPS	/PHASE		

Cherokee Cty Rest Area E6 REVISED PANEL—	, V , I	SQUARE [E <u>3</u> WRE			UIT BREAKE	
INLAIDED I VINEE	TYPE: _	NQOD		MOUNTIN							ND BUS	• •
				MINIMUM	AIC: _	VERI	<u>FY</u>		SERVICE EI	_	AIED	⊠YES □NO
LOAD SERVICE	CKT BRKR	WATTS F	<u>PER PHASE</u> I B	CKT	NEU A	JTRAL B	CKT NO	WATTS A	PER PHASE B	CKT BRKR		LOAD SERVICE
ROADWAY LIGHTS		2340	 	1			2	464				ELEC/MECH LTS.
	30A		2340	3			4		392		LOBBY & F	
ROADWAY LIGHTS		2340		5			6	495			EXTERIOR I	
	30A		2340	7			8		360	20A	MECH HALI	_ REC.
ARRESTER SPARE	20A			9	$\overline{}$		10	360		20A	WP REC.	
ARRESTER SPACE	20A			11			12		360	20A	INFO DESK	REC. 1
SEWAGE ALARM	20A	180		13			14	720		20A	INFO DESK	REC. 2
SPARE	20A			15			16		1920	20A	HAND DRY	ERS (WOMEN)
ROADWAY LIGHTS	15A	1530		17			18	1920		20A	HAND DRY	
AHU-1	50A		4332	19			20			20A	SPARE	
•		4332		21	$\overline{}$		22			20A	SPARE	
HP-1	45A		2832	23			24			20A	SPARE	
•		2832		25			26	500		20A	FLUSH VAL	.VE J-BOX
ERV-1	25A		1535	27			28		540			CH, EXTERIOR, ATTIC
•		1535		29			30	2250			EWH	
SPARE	30A			31			32		2259	30A		
•				33	$\overline{}$		34	1500		20A	REC- HOT	BOX(S)
SEWAGE PUMP	40A		3840	35			36		500			DOOR OPENERS
•		3840		37			38				SPARE	
SPACE				39			40			20A	SPARE	
SPACE				41			42				SPACE	
NOTES	SUB-TOTALS 'B'	14597	17219		1	00A_	BUS	6709	5872	SUB-	TOTALS 'A'	
			, ,,,,,,,,	1000		00A_	LUGS	14597	17219		TOTALS 'B'	
EXISTING/UNCHANGED C	CIRCUIT					00A	FEED	21306	23091		D TOTAL	TOTAL CONNECTED LO
NEW/REVISED CIRCUIT						RIFY	SIZE	178A	192A		/PHASE	1
NEC ALLOWABLE D	EMAND FACTO	RS	DIVER	SIFIED							, <u></u>	
1) DEMAND FACTORS	PER NEC 220		LOA	D TYP	E		DEMAND FACTOR	A	В	TOTAL	L DIVERSIFIE	TD LOAD
2 LARGEST OF: NEC	TABLE 220.12 OR		GENERAL	LIGHTING	}		125%	8962	6340		15302	
CONNECTED LOAD	TRACK LI				125%							
		GENERAL RECEPTA				10KVA@100% 10KVA@50%	1080	1260		2340		
3 NEC TABLE 220.56		④ NEC 220.51					125%	3360	3360		6720	
4 NEC 220.51			MOTORS				100%	2407	2407	2407 4814 1875 5625		
(4) NEC 220.51 (5) NEC 220.43A, 200	•		EQUIPMEN		LL OTHERS	-		3750	1975		つわソウ	
(4) NEC 220.51 (5) NEC 220.43A, 200 (6) NON-COINCIDENT L	OADS, LARGEST		EQUIPMEN WATER H KITCHEN	EATERS EQUIPME	NT		125% 100%	3750 	1875		5625 	
(4) NEC 220.51 (5) NEC 220.43A, 200	OADS, LARGEST		EQUIPMEN WATER H KITCHEN FIX. ELEC	EATERS EQUIPME S. SPACE	NT HEAT.	3 •	125% 100% 100%	 3840	 3840		7680	
(4) NEC 220.51 (5) NEC 220.43A, 200 (6) NON-COINCIDENT L	OADS, LARGEST		EQUIPMEN WATER H KITCHEN	EATERS EQUIPME S. SPACE	NT HEAT.	3	125% 100%					
(4) NEC 220.51 (5) NEC 220.43A, 200 (6) NON-COINCIDENT L	OADS, LARGEST		EQUIPMEN WATER H KITCHEN FIX. ELEC SHOW WII	EATERS EQUIPME S. SPACE	NT HEAT. SHTS	3 • • •	125% 100% 100% 125% 125% 100%	3840 6440	3840 6060		7680 12500	
(4) NEC 220.51 (5) NEC 220.43A, 200 (6) NON-COINCIDENT L	OADS, LARGEST		EQUIPMEN WATER H KITCHEN FIX. ELEC SHOW WII SIGN	EATERS EQUIPME S. SPACE	NT HEAT.	3 • • •	125% 100% 100% 125% 125%	3840 	3840 		7680 	= 230A TOTAL

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Ben Burke C93761FB80F34D5.. 10/19/2016

STATE ID# 16-16033-01A WBS ELEMENT 51213.011

PROJECT TITLE CHEROKEE COUNTY REST AREA

US 19 AND COVER STREET ANDREWS, NORTH CAROLINA

PROJECT NO. 1504a

DRAWING TITLE PANEL SCHEDULES/ SERVICE RISER

PLOT DATE

10/18/16

